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VIDEODISC INTERPERSONAL SKILLS TRAINING AND ASSESSMENT(VISTA):
EQUIPMENT SETUP AND TROUBLESHOOTING

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SECTION 1

INTRODUCTION

VISTA was developed for counseling training as conducted by the Infantry Officer's Basic Course (IOBC). VISTA combines the training advantages of the microcomputer and the videodisc player to create a simulated counseling session. A problem or situation within the platoon requires counseling of a subordinate by a platoon leader. The student calls on his knowledge of counseling to decide what actions the televised platoon leader should employ. In doing so, the student is only a step away from real counseling.

This manual describes procedures to set up and troubleshoot the equipment used by VISTA. There are five sections:

1. Introduction
2. Equipment and Its Function
3. Equipment Setup
4. Fine Tuning and Testing the System
5. Troubleshooting

Section 2, Equipment and Its Function, gives a technical description of equipment which is both required and optional for VISTA. This section classifies the system into 5 components: the videodisc system, the computer system, monitor/TV set, interactive devices, and the printer. Section 2 also gives a brief description of the function of these components in VISTA operation. This information may be helpful in case troubleshooting is required.

Section 3, Setup, provides a step-by-step description and illustration of how to connect various VISTA components. This section was written so that setup could be performed by a person with a minimal level of technical

expertise. A computer expert or an electronic wizard should not be required for setting up the VISTA system. Probably the best indicator of level of expertise required is the ability of the individual to read the procedures for setting up the equipment, and after doing so, feeling relatively confident that instructions can be followed.

After the system is set up, Section 4, Fine Tuning and Testing the System, describes procedures to tune the system to operate at its best and highest quality. To perform these procedures, the system has to be turned on and operated. So in a sense, procedures described in Section 4 also serve as a test of correct system operation. If the system does not operate correctly after being set up, Section 5, Troubleshooting, provides guidance for solving most operational problems.

In addition to this document, the reader should also have at hand the document entitled "VISTA: INSTRUCTOR'S GUIDE."

SECTION 2

EQUIPMENT AND ITS FUNCTION

This chapter will describe equipment required for VISTA. In addition, each piece of equipment will also be discussed in terms of its role in VISTA operation. Equipment is classified into 5 types: videodisc, computer, monitor/TV set, interactive device (student responder), and printer. Each of these will be discussed separately below.

2.1 Videodisc System

The videodisc system for VISTA contains the following elements:

- (1) a videodisc player (either a SONY model LDP-1000 or MCA DiscoVision models PR-7820-1 and PR-7820-3), and
- (2) VISTA videodiscs.

The videodisc looks somewhat like a phonographic record; however, the silver finish gives a mirror-like appearance. Unlike a phonographic record, the videodisc has an outer coat of plastic that protects the underlying recordings of sight and sound. The protective coating prevents small scratches and fingerprints from affecting operation.

It is possible to store 54,000 frames of information on each side of the videodisc allowing for 30 minutes of motion pictures with sound. Each frame is numbered making it possible to identify the starting and stopping location of each motion sequence on the videodisc. The videodisc player uses a laser beam to read information stored on the videodisc; the permanently stored motion sequences are then played back on a monitor/TV set.

In VISTA, staged vignettes or acted segments of a counseling session are stored on videodiscs. The students' responses determine how the session will be put together or sequenced. Unlike a videotape system, the videodisc system

can quickly "call-up" and play any frame or motion sequence; this allows for a more realistic setting during the simulated counseling sessions.

There are a total of 9 videodiscs dealing with counseling by 2nd lieutenants. There is a separate scenario (lesson) on each of 7 discs. Two discs, one dealing with insubordination and the other with EER counseling, contain two scenarios each.

2.2 Computer System

2.2.0 Introduction. The Apple II computer controls operation of VISTA. The control comes from the programming of the computer, but the programming also allows the student to have a certain degree of control over VISTA. Accessory components or peripherals must be added to the Apple II. Some of the components are boards or "cards" which are inserted into expansion slots of the computer as described in the chapter EQUIPMENT SETUP. The computer system of VISTA requires the following:

1. an Apple II (or an Apple II plus) computer with 48K RAM,
2. a 16 K RAM card (also called Apple language card),
3. two 5-1/4 inch Apple II diskette drives and a controller card,
4. one of the following videodisc player controller cards:
 - a. Video Microcomputer Interface (VMI) card manufactured by Allen Communications, Inc. (interfaces with both Sony and MCA players),
 - b. Videodisc Apple Interface (VAI-1) card manufactured by Colony Productions, Inc. (interfaces only with MCA or Pioneer players),
5. a clock card (Mountain Computer, Inc.).

2.2.1 The RAM card. The computer programming language for VISTA is Pascal. The RAM card adds an additional 16K RAM to the 48K RAM already present in the Apple II; this extra memory is necessary anytime the Apple II is using Pascal.

2.2.2 Diskettes and diskette drives. VISTA requires:

1. two 5-1/4 inch Apple II diskette drives,
2. a drive controller card, and
3. a SYSTEM diskette and a LESSON diskette.

Diskettes are round plastic objects (5 1/4 inches in diameter) that are partially protected from damage by a square outer jacket. Diskettes in VISTA are used as memory devices which store information needed to operate VISTA. In addition, student performance on lessons can be stored on diskettes.

Diskettes are placed in and operated by diskette drives. The computer controls the drives to allow storage and retrieval of information on the diskettes.

Two diskettes are required to operate a particular VISTA lesson: a SYSTEM diskette and a LESSON diskette. A LESSON diskette contains information about each lesson; each lesson has its own LESSON diskette, and the title of the LESSON diskette should match that on the videodisc which covers that lesson. The SYSTEM diskette contains the computer program and other information needed to operate VISTA. There are three types of SYSTEM diskettes: SONY/VMI, MCA/VMI, and MCA/VAI-1. Selection of the SYSTEM diskette to be used is based on the type of videodisc player and videodisc player controller card as discussed in the next section.

2.2.3 The videodisc player controller card. The videodisc player controller card allows the computer to control operation of the videodisc

system; it is the interface device between the computer and the videodisc player. The videodisc player controller card manufactured by Allen Communications, Inc. (VMI or Video Microcomputer Interface) can be used with both SONY and MCA videodisc players. However, the controller card manufactured by Colony Productions, Inc. (VAI-1) can drive only the MCA players. There are three possible configurations of SYSTEM diskettes, videodisc players, and videodisc controller cards which can be used with VISTA:

<u>SYSTEM Diskette</u>	<u>Videodisc Player</u>	<u>Videodisc Player Controller Card</u>
1. SONY/VMI	SONY (LDP-1000)	Allen Communications, Inc. (VMI)
2. MCA/VMI	MCA (PR-7820-1 & PR-7820-3)	Allen Communications, Inc. (VMI)
3. MCA/VAI-1	MCA (PR-7820-1 & PR-7820-3)	Colony Productions, Inc.

2.2.4 The clock. VISTA requires a clock card manufactured by Mountain Hardware, Inc. Functions of the clock include keeping track of real time, time between student responses, and other operations of VISTA.

2.3 Monitor/TV Set

The student sees and hears counseling scenarios/lessons through the monitor/TV set. The picture on the monitor/TV set comes from two sources: the videodisc system and the computer. The videodisc system stores the motion sequences used to simulate the counseling session. The computer produces all the text which appears on the screen.

If a TV set is used, then the video input to the TV must go through a RF modulator. A monitor does not require the RF modulator.

2.4 Interactive Devices

The student is required to make responses throughout the lesson. When text appears on the screen, he must: (1) make responses to continue the

lesson, (2) choose between several choices, and (3) if student records are kept, then a student identification number is entered. The student can use either a light pen or a hand controller to make his responses. The student will never need to use the computer keyboard.

Light pen. The Symtec light pen is attached by a cord to a light pen controller card inside the computer. With the light pen, the student can make a response or select an answer by: (1) touching the tip of the light pen to a portion of the monitor/TV set and (2) then touching the brass ring near the end of the pen. For example, if the student had to choose between 4 possible alternatives, he would place the light pen to his choice on the TV/monitor and then touch the ring near the end of the pen.

Hand controller. The paddle or hand controller is usually a plastic case with (1) a knob located on top and (2) a button located on the side. The controller is attached to the computer by a cord. When it is time for the student to respond, the white square (called a cursor in computer terminology) on the screen can be moved up or down by turning the knob. A response is entered when the student moves the square to the line of choice and then pushes the button on the knob assembly.

Any paddle designed for the Apple II should work with VISTA. Three different hand controllers have been tried with VISTA and the one manufactured by the Keyboard Company has the most comfortable feeling when held in the hand. In addition, the cord is secured to the computer by a grommet.

2.5 Printer (optional)

The main function of the printer is to produce a paper copy of student performance during lessons. If permanent student records are not required, then neither is the printer.

VISTA operates with the Apple II Silentyte printer. A printer controller card is needed for operation.

SECTION 3

EQUIPMENT SETUP

3.0 Introduction

This chapter describes tasks to set up or connect the equipment required for VISTA. Much of the setup (for example, inserting the controlling cards into the computer) is described in manuals provided with the equipment. You are strongly encouraged to read all manuals provided with the equipment and to follow procedures, suggestions, and recommendations. However, not all manuals are easy to follow, and they often contain more information than you will need to know. This chapter simplifies description of equipment setup; however, information provided in this chapter will not make you an equipment expert.

The Apple II computer controls the VISTA system, but first, a number of components must be connected to the computer. The first 9 parts of this section describe how to prepare the computer for VISTA operation. Remaining portions cover setting the switches on the monitor/TV set (3.10) and videodisc player (3.11) and connecting cables to allow audio and video output (3.12). The final portion (3.13) describes how to arrange the equipment. The 13 portions of this section are entitled:

1. Preparing to load the Apple II,
2. Inserting the Apple language card (16K RAM) into the Apple II,
3. Installing the hand controller,¹
4. Inserting the Symtec light pen card into the Apple II,²
5. Connecting two diskette drives to the drive controller card and inserting the card into the Apple II,

¹Your system may have both a hand controller and/or a Symtec light pen.

²Ibid.

6. Inserting the Mountain computer clock card into the Apple II,
7. Connecting the videodisc controller card and inserting the controller card into the Apple II,
8. Connecting the printer to the printer controller card and inserting the card into the Apple II,¹
9. Summary of card positions in Apple II slots,
10. Setting switches on the monitor,
11. Setting switches on the videodisc player,
12. Cable connections for video switching and audio output, and
13. Arrangement of the equipment.

3.1 Preparing to Load the Apple II

3.1.1 Task 1: Plug in the computer. The power cord of the computer must be plugged into wall outlet and the computer (at rear beside power-on switch), so that static electricity can be drained off through the grounding provided by the power cord. Static electricity can destroy delicate electronic equipment. Be sure that the power switch on the back of the computer is turned off. Physical damage to the computer may occur if the power is on while performing many of the tasks.

3.1.2 Task 2: Removing the cover. The computer has a keyboard on the front with a covered compartment that lies behind the keyboard. The rear cover must be removed before components can be added: (1) pull up on the rear edge of the cover until the two corner fasteners pop apart, (2) slide the cover backwards until it comes free, and (3) lift the lid (see Figure 3-1).

¹Your VISTA system may or may not have a printer.

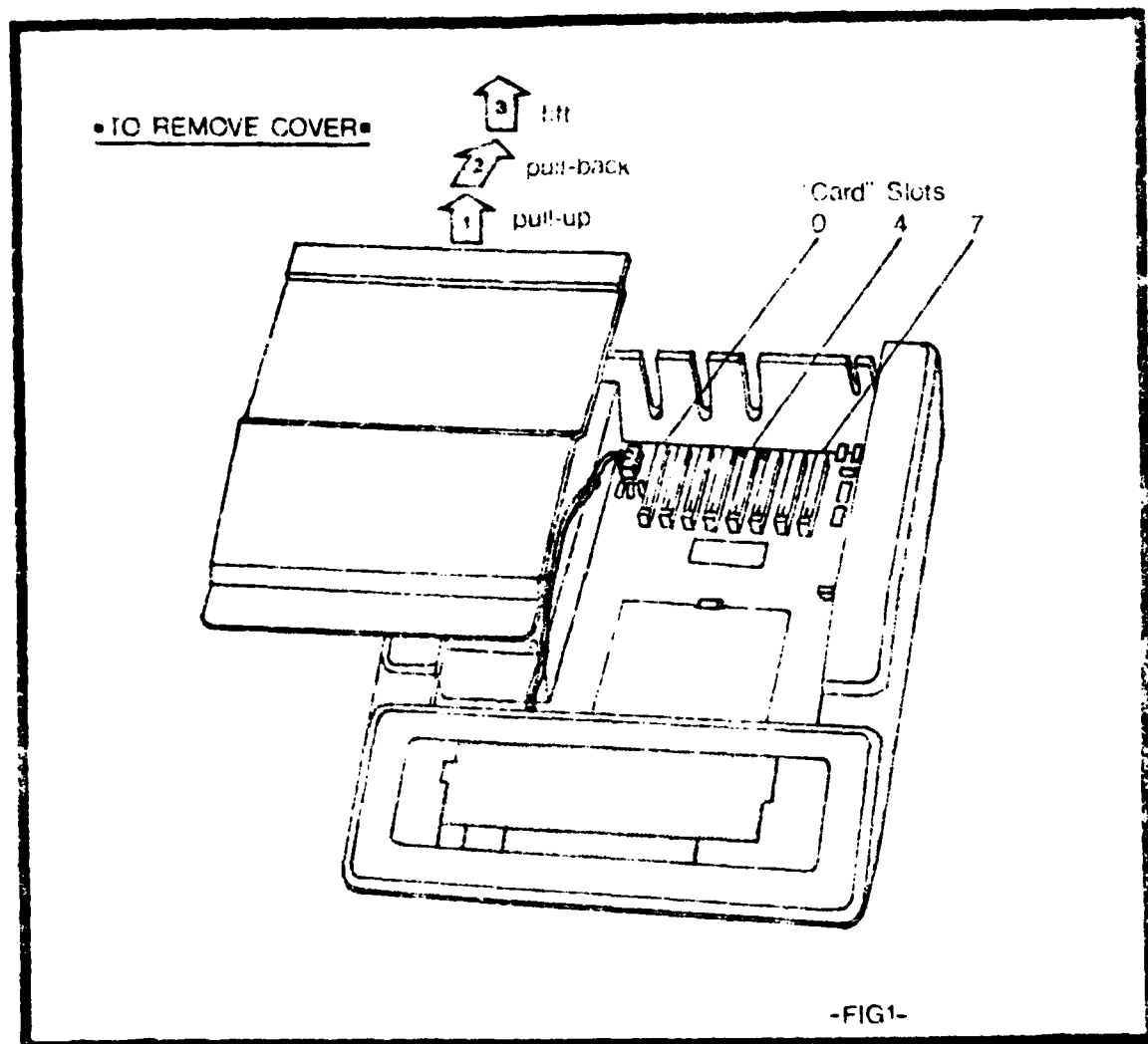


Figure 3-1. Removal of the Apple II cover to access "card" slots.

3.1.3 Task 3: Locating "card slots". Many of the tasks in preparing the computer system require insertion of memory and controller "cards" into the computer. A "card" is a flat, printed circuit board. One side of the card contains black elements called chips, while soldering connections can be seen on the reverse side. Toward one corner of a card is a lip with gold colored edge-connectors which look like gold "fingers". Signals between the card and computer pass through these fingers.

CAUTION: Do not scratch or touch the gold-plated edge connectors. Fingerprints can tarnish the connectors which can affect data signals.

The cards are inserted into long, narrow sockets called slots. (Do not attempt to insert a card until specifically instructed to do so in later sections.) There is a row of 8 slots located inside the Apple II near the rear of the circuit board. As can be seen in Figure 3.1 above, the leftmost one (looking at the computer from the keyboard) is Slot #0 and the rightmost is Slot #7.

The lip and gold fingers of the card are inserted into a slot. To insert cards, wiggle them forward and backward into a slot. Continue the insertion until the card is firmly seated.

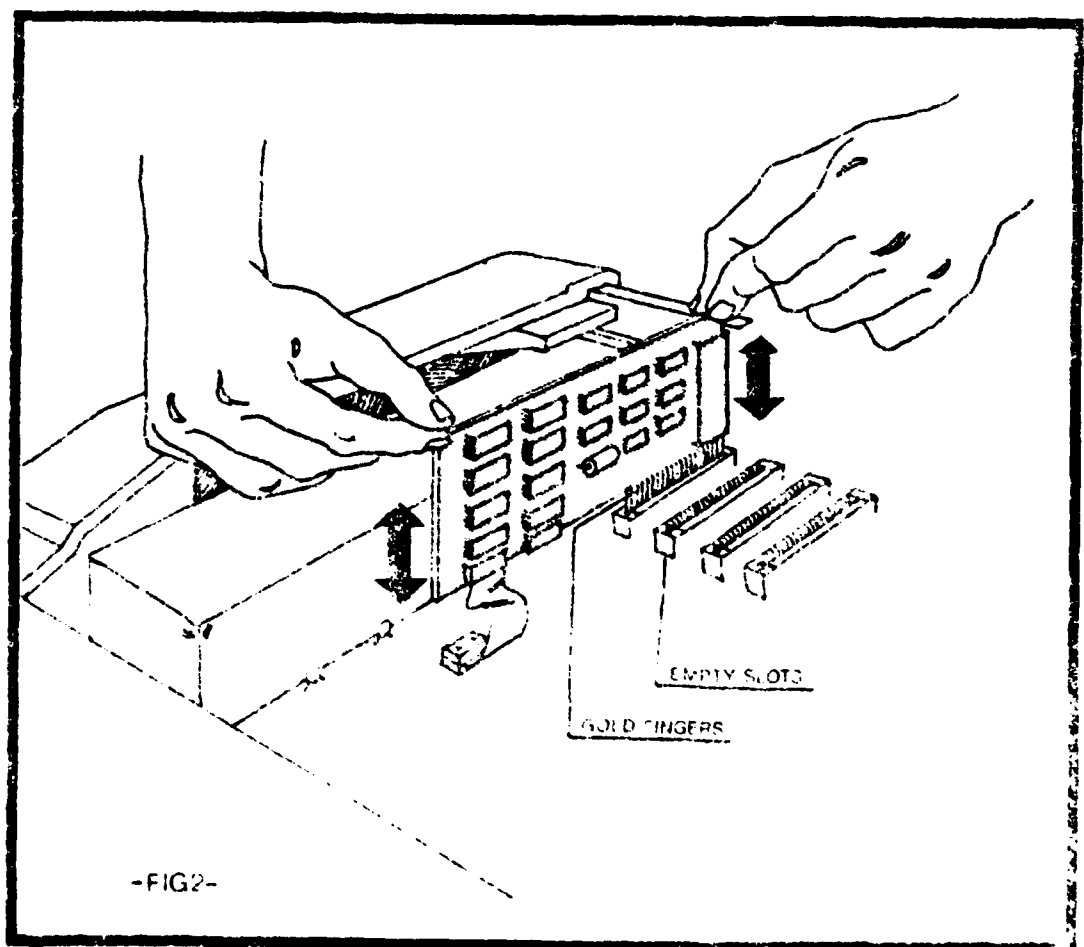


Figure 3-2. Technique for inserting a card into an Apple II slot.

CAUTION: Before a card is inserted, touch the power supply cover (the big box inside the computer on the left) to discharge static electricity. You will not get shocked since the box is well-grounded. Touching the power supply drains any static electricity off your body to prevent damage to electrical circuits.

3.2 Inserting the Apple Language Card into the Apple II

The language card is no more than a 16K memory expansion board. It can be obtained either separately or as part of the Apple Language System.

3.2.1 Task 1: Removing a memory chip from Apple II. Inside the computer are a number of small, black, rectangular elements called "chips". On the large printed circuit board to which these chips are attached, is a square-shaped area marked with a white line. There are 24 RAM (RAM is an acronym for Random Access Memory) chips within this square.

Before the Apple II language card can be inserted, the RAM chip in the upper left-hand corner of the white-outlined square must be removed. A chip-puller is provided with the language card. Use the puller like tweezers; grasp the chip with the two prongs inserted into the two gaps between the chip and the socket. While holding the chip firmly, wiggle the chip slightly backward and forward. Pull gently upward as you wiggle and the chip should come loose.

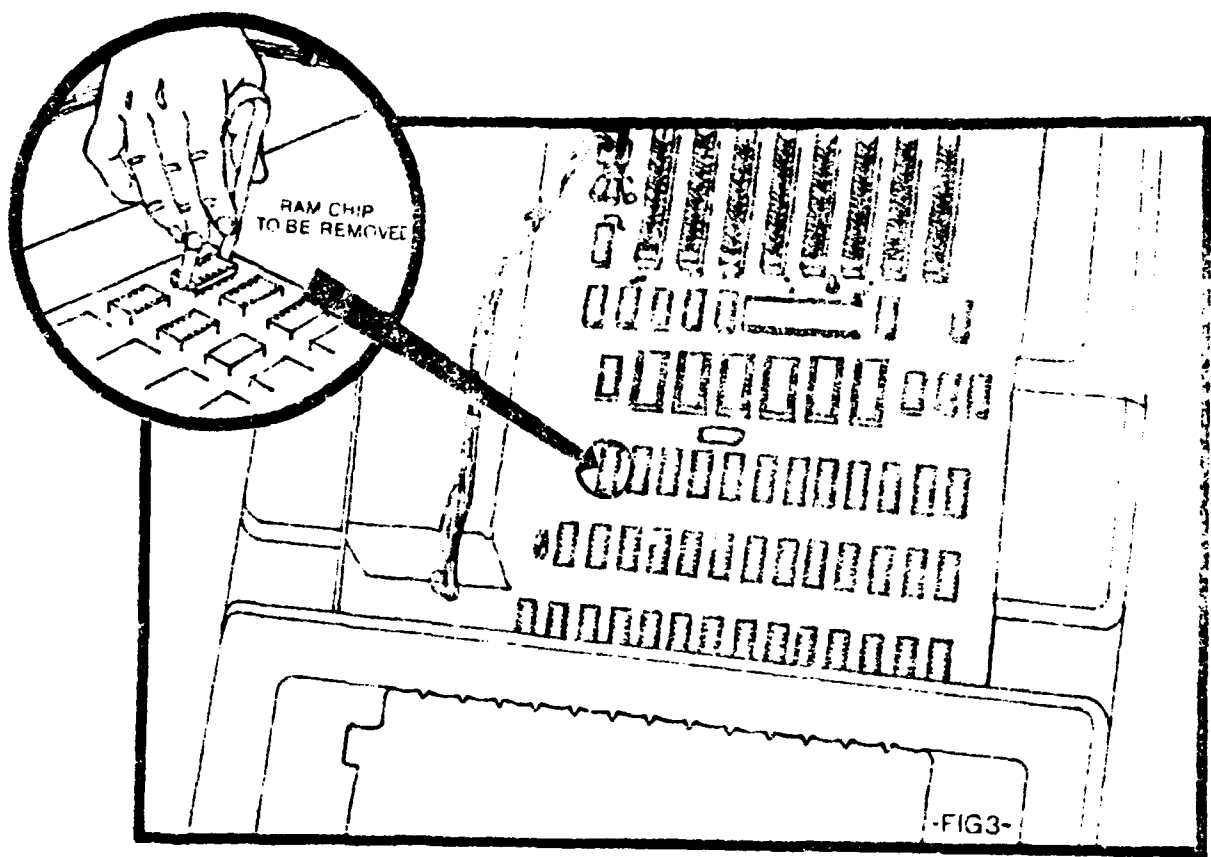


Figure 3-3. Removal of a RAM chip to allow connection of the language RAM card.

3.2.2 Task 2: Insert plug on card into memory socket. On the bottom corner of the language card is a ribbon cable. At the end of this cable is a plug which must be inserted into the socket of the removed memory chip. The plug has three black plastic prongs (two are round and one rectangular) which make it easier to insert it in the correct orientation.

While holding the card with one hand as shown in Figure 3-4 p. 14, use your other hand to gently press the plug into the empty socket (it should seat easily).

For the plug to be inserted correctly, all "pins" on the plug must be aligned with the holes in the socket.

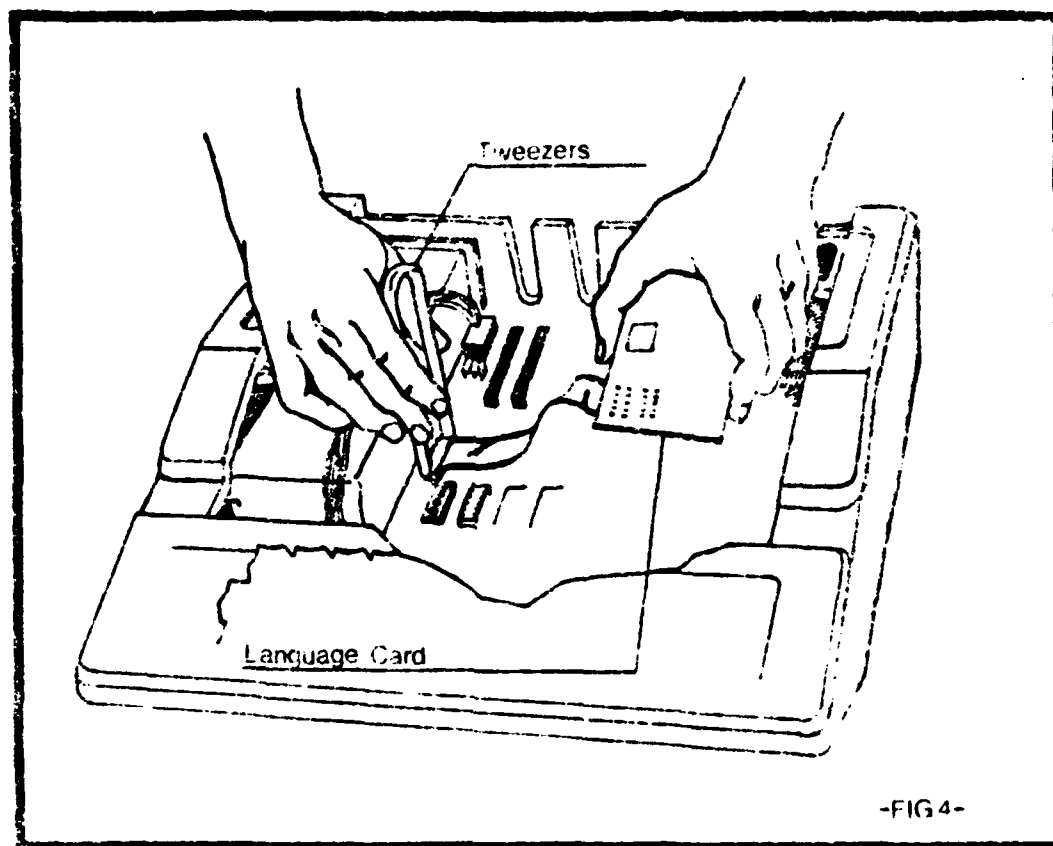


Figure 3-4. Insertion of the language card chip into the empty RAM socket.

3.2.3 Task 3: Insert the language card into Slot #0. Insert the card into Slot #0 of the Apple II. Slot #0 is the leftmost slot, when facing the computer keyboard.

3.3 Installing The Hand Controller

Installation of the paddle or hand controller is not necessary if the light pen will be used. Hand controllers manufactured by a number of different companies can be used. However, the hand controller manufactured

the Keyboard Company is recommended. It has a comfortable feel when held and it has a "strain relief plug" to prevent the student from pulling the controllers out of the computer. The following is a description of how to install the hand controller by the Keyboard Company; however, installation is similar for other hand controllers.

3.3.1 Task 1: Select the correct hand controller. Upon unpacking, there are two hand controllers each attached by cables to a plug. The hand controllers in this set are labelled "0" and "1"; these numbers are cast in plastic on the knob of each hand controller. Only the controller labeled "0" will work, so it is necessary that controller "1" be secured behind the computer. To do this, wind the cord around the hand controller and bind this with a rubber band or a twist tie; this is illustrated in Figure 3-5 below.

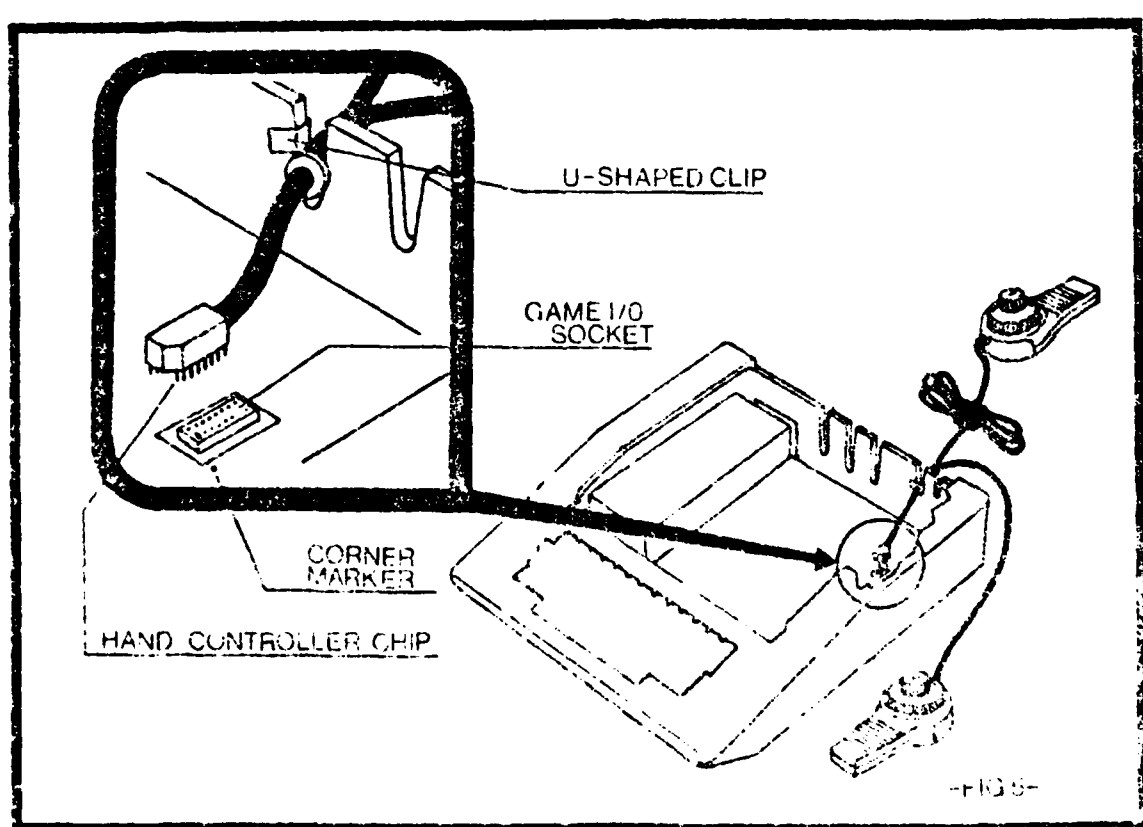


Figure 3-5. Installation of the hand controller.

Hand controllers manufactured by other companies may not be numbered. If they are not, it will be necessary to identify which is the proper hand controller to use; this is done after the system is operating and will be described in the following section Fine Tuning the System.

3.3.2 Task 2: Inserting the "strain relief plug" onto the computer.

The cord support knob on the plug of the hand controller prevents the user from detaching or pulling the hand controller out of the computer. Insert the support knob into the second notch from the right (when facing the computer keyboard) on the back of the computer. The U-shaped metal clip attached to the top of the support knob should be attached to the side of the computer as shown above.

3.3.3 Task 3: Insert hand controller chip into GAME I/O socket. On the end of the cord that is now lying within the computer, there is a black, rectangular-shaped chip or plug with pins extending from the bottom. Be careful when inserting this plug because the pins bend easily. With the cord on the chip facing toward the rear of the Apple II, insert the chip into the socket labeled GAME I/O (I/O means input and output; see Figure 3.5).

On hand controllers manufactured by other companies, the cord on the plug may come straight out of the top rather than out of the back. The plug will be notched on one corner or there will be a white dot in one corner. As the plug is inserted into the socket, the marked corner should be placed in the corner of the GAME I/O socket that has a white dot at one corner. As you are facing the Apple II, the white dot is near the right front corner of the socket.

3.4 Inserting the Symtec Light Pen Card into the Apple II

Installation of the light pen is not required if the hand controller is used. If use of the light pen is desired, then perform the following tasks.

3.4.1 Task 1: Inserting the controller card. The light pen controller card is inserted in Slot #5 (the sixth slot from the left). Place the light pen down behind the computer before inserting the card.

3.4.2 Task 2: Attaching the alligator clip. The alligator clip attached to the lightpen controller card must be attached onto a clip located on the back wall inside the computer. The clip is located on a silver post (RCA type phonojack) located in the lower right-hand corner inside the Apple II; on the main circuit board below this plug is written VIDEO. The alligator clip should be clipped to the center post.

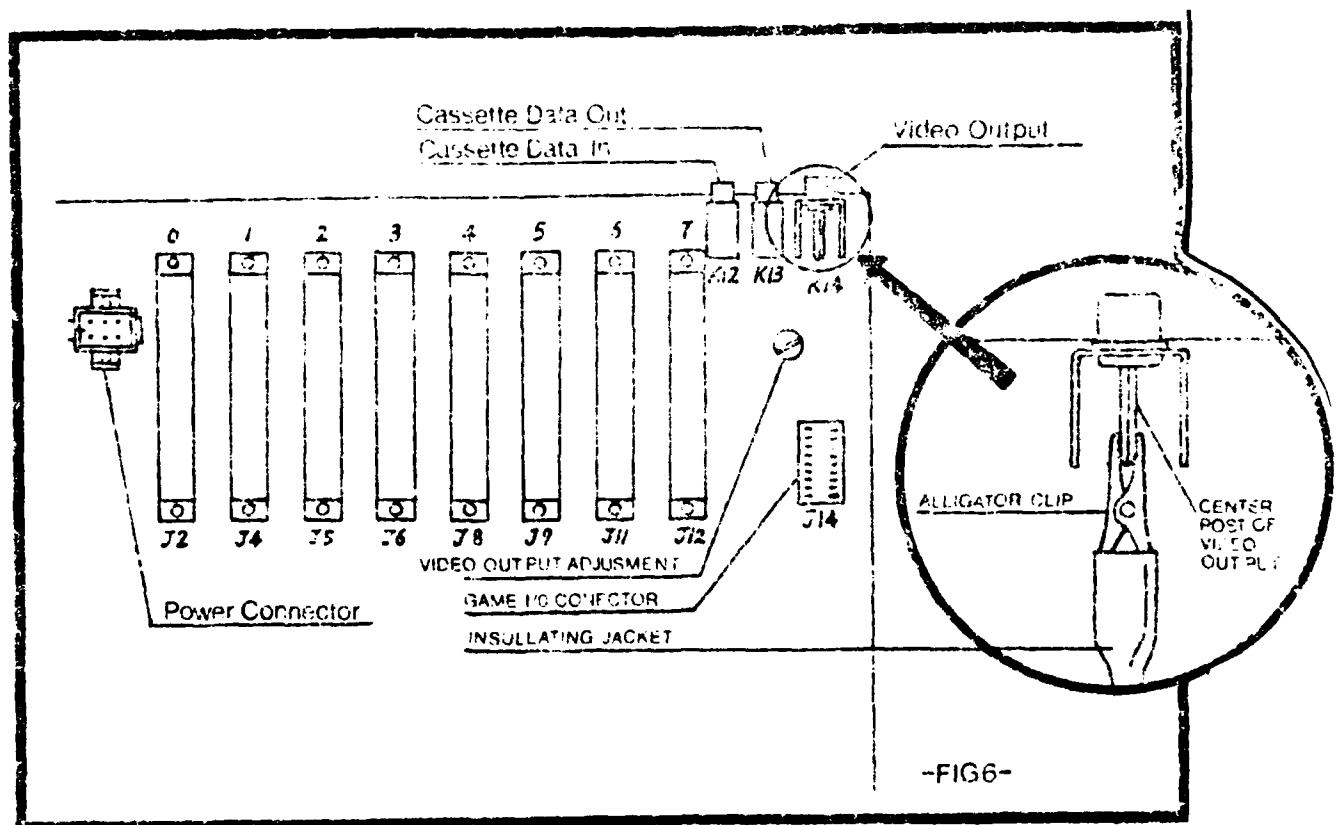


Figure 3-6. Attaching the alligator clip of the light pen card to the Apple II.

3.5 Connecting Two Diskette Drives to the Drive Controller Card and Inserting the Card into the Apple II

The following equipment is required:

1. Apple II computer,
2. Two diskette drives,
3. Controller card for the diskette drives, and
4. Two sticky labels, one labelled "SYSTEM Drive" and the other labeled "LESSON Drive".

3.5.1 Task 1: Label diskette drives. First, label the two diskette drives. Place the label "SYSTEM Drive" on the front of one drive and label "LESSON Drive" on the other drive (See Figure 3-7).

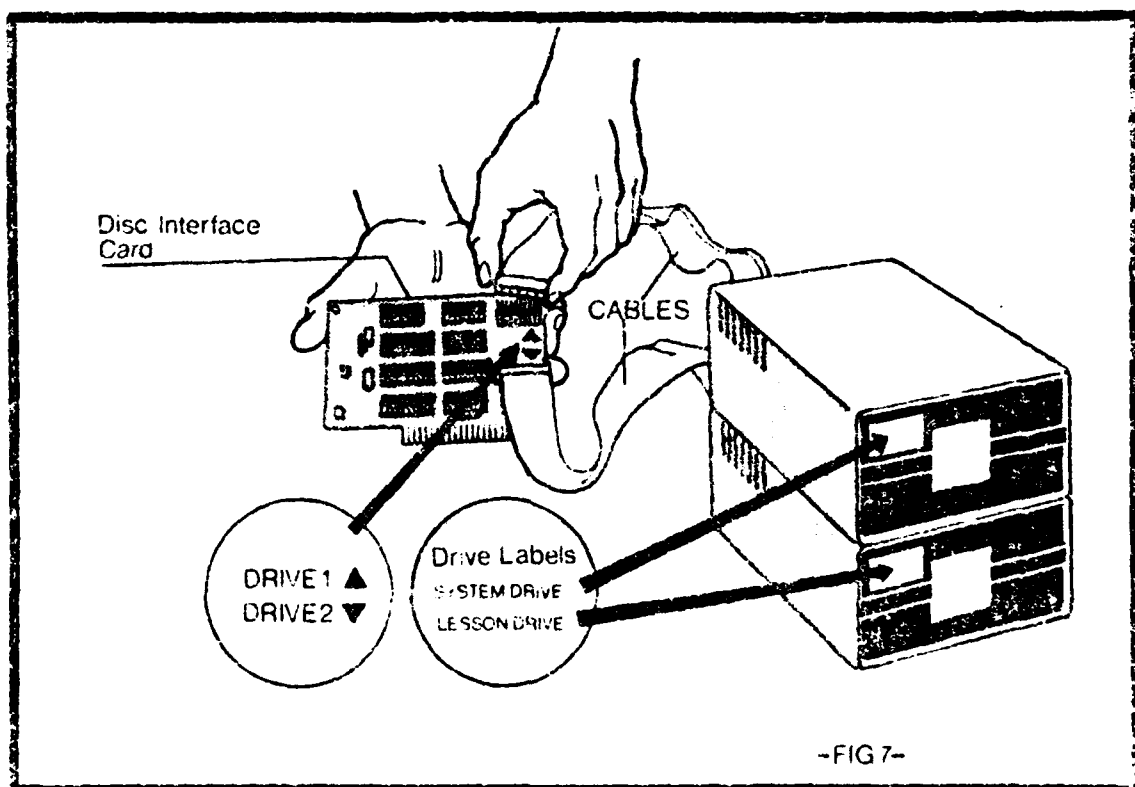


Figure 3-7. Labeling the disk drives and plugging the drives into the controller card.

CAUTION: Diskette drives, unlike the Apple II computer, are mechanical drives with motors and moving parts. Handle the drives with care. Rough handling, such as dropping the drive, or having things dropped on them, may damage or misalign the drives.

3.5.2 Task 2: Connecting drives to diskette drive controller card. The two diskette drives are connected to the controller before the controller card is plugged into the computer. It is easier to make proper connections if the controller card is not already connected to the computer. Place both disk drives to the immediate right of the computer.

A cable shaped like a "ribbon" is attached to each diskette drive. The flat, 1-inch wide cable has a plug on the end. Take the plug on the "LESSON Drive" and push it onto the set of pins labeled "Drive 2" on the controller card. When the cable is plugged into the controller card correctly, the cable should leave from the connector on the side away from the controller card as shown in Figure 3-7 p. 18; do not jam the cable between the connector and controller card when plugging into the controller card.

Make sure that all the pins of the controller card connector go into the matching holes in the ribbon cable connector and are seated gently but firmly.

Next, take the connector from the "SYSTEM Drive" and slip the connector over the connection labeled "Drive 1" on the diskette drive controller card.

CAUTION: If the cable from a disk drive to the controller card is not plugged into the controller card correctly, the disk drive unit and its electronic components may be damaged when the power is turned on.

3.5.3 Task 3: Insert controller card into Slot #6. The final step is to insert the diskette controller card into the computer. Slot #6 is the next

to the last slot on the right as you are facing the computer. Insert the "fingers" of the controller into Slot #6. The fingers will enter the socket with some resistance and will then seat firmly after some wiggling backward and forward. Lead the cables connected to the controller card out through the nearest deep cut-out in the computer back.

3.6 Inserting the Mountain Computer Clock Card

3.6.1 Task 1: Setting the control switches. Switches on the clock card must be set correctly for the VISTA system to operate. The switches are located on the bottom left-hand side of the card. The switches should be set as illustrated below:

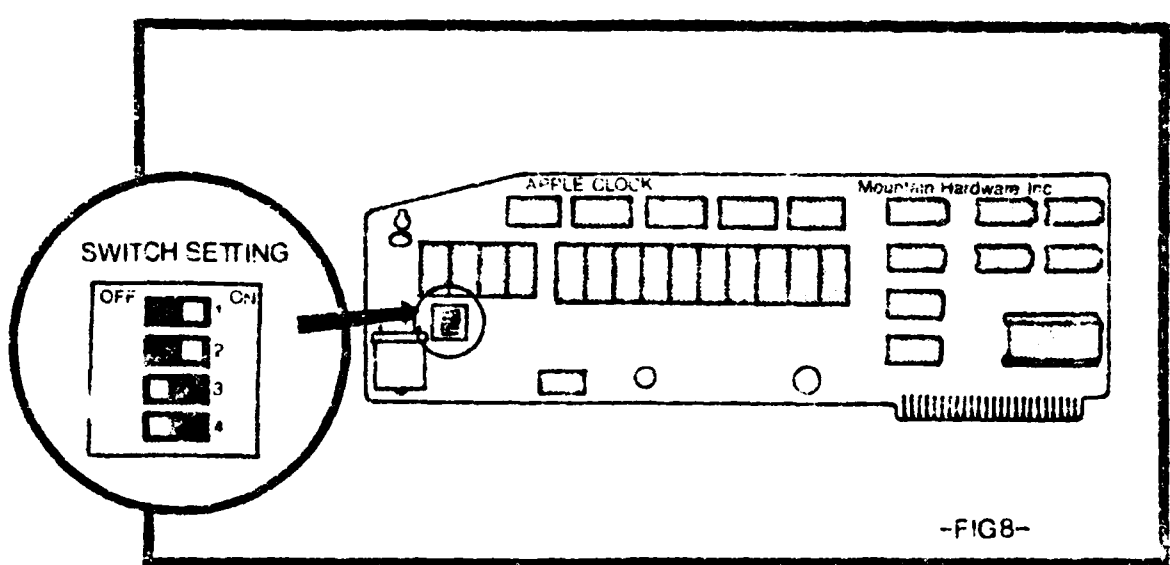


Figure 3-8. Switch setting on the clock card.

The upper two switches are pushed to the right while the lower two are pushed to the left.

3.6.2 Task 2: Connecting the battery to the clock card.

On the back of the clock card will be attached a 9-volt battery. Above the battery will be a standard 9-volt battery terminal connector. This

connector must now be attached to the battery. This is done in the same way as a portable radio. The connector will go on the battery in only one way and must be secure.

3.6.3 Task 3: Insert the clock card into Slot #7. Insert the clock controller card into Slot #7; the rightmost slot. (See Figure 3.1). Check to be certain that the U-shaped clip attached to the top of the cord support knob of the hand controller is not in contact with the clock card.

3.7 Connecting the Videodisc Controller Card and Inserting the Card into the Apple II

VISTA can operate with three types of videodisc players (Sony LDP-1000, MCA PR-7820-1, and MCA PR-7820-3) and two videodisc controller cards (VMI by Allen Communications, Inc. and VAI-1 by Colony Productions). These options can be configured in three combinations with VISTA:

<u>Player</u>	<u>Controller Card</u>	<u>Section</u>
1. Sony	VMI (Allen Communications, Inc.)	3.7.1
2. MCA	VMI (Allen Communications, Inc.)	3.7.2
3. MCA	VAI-1 (Colony Productions)	3.7.3

Separate instructions follow for these three configurations. (See last column of above chart.)

3.7.1 Sony videodisc player with a VMI controller card. The following equipment is required:

1. Apple II computer,
2. VMI videodisc player controller kit (Allen Communications, Inc.),
 - a. videodisc controller card,
 - b. video junction box, and
 - c. ribbon cable to connect the Apple II and videodisc player.

Task 1: Setting switches on the videodisc player controller card. Hold the controller card with the chips facing you and the gold fingers facing down. Locate the set of four small switches in a red encasing. Using a pencil, gently press the top of the two switches on the left until the top of the switches are flush with the case. For the two rightmost switches, press the bottom of the switches until they are flush with the encasing as illustrated below.

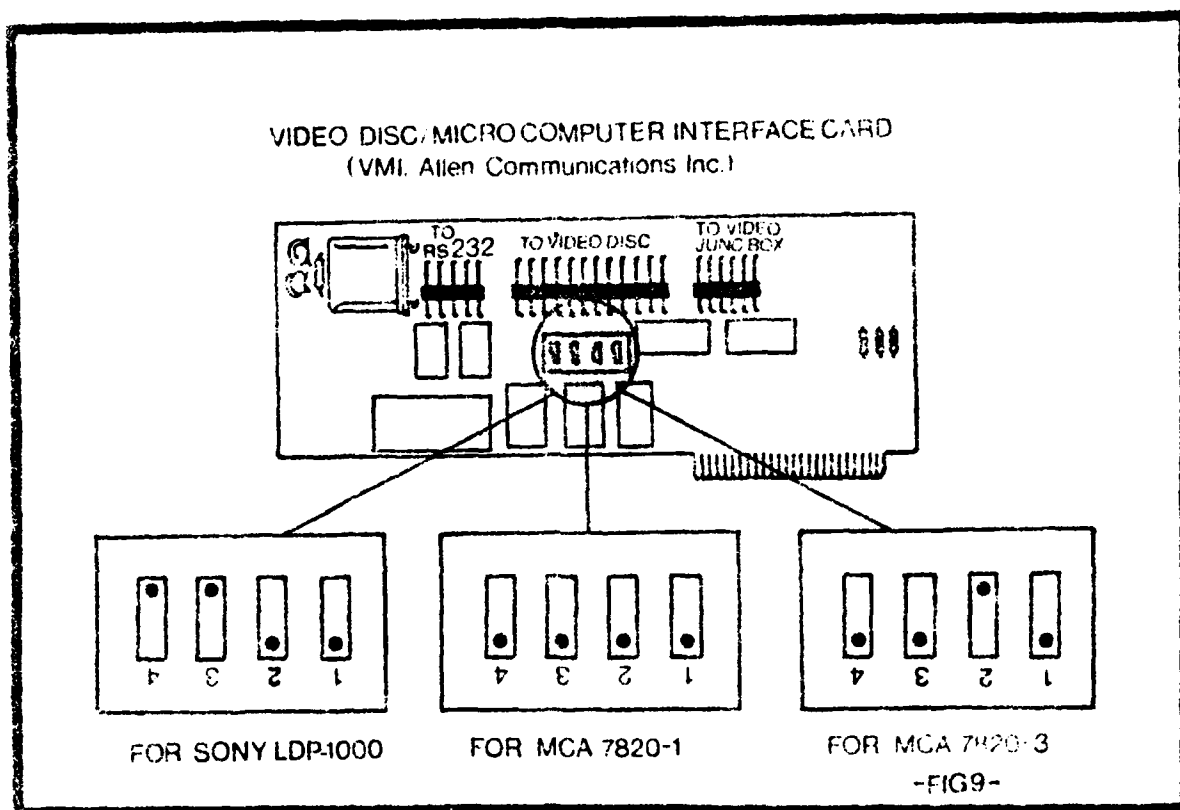


Figure 3-9. Switch settings on the videodisc interface card for the three models of videodisc players (Sony LDP-1000, MCA PR-7820-1, and MCA PR-7820-3).

Task 2: Connecting the controller card to the player. Pick up the end of the ribbon cable that has the smaller plug. While holding the controller card (fingers of card facing downward on the right), place the plug of the ribbon cable on the leftmost connector; the connector is labeled RS 232. Take

card (fingers of card facing downward on the right), place the plug of the ribbon cable on the leftmost connector; the connector is labeled RS 232. Take the other end of the ribbon cable and attach it to the socket labeled EXT on the Sony videodisc player. (See Figure 3-10, p. 24)

Task 3: Plug video junction box cable into videodisc player controller card. The video switching/junction box is a black box that comes with the controller card. A ribbon cable is attached to the black box. Hold the videodisc controller card with fingers of the card facing down and to your right. Gently place the plug on the end of the ribbon cable on the connector pins on the controller card labeled TO VIDEO JUNC BOX; this connector is located in the upper right-hand portion of the card. (See Figure 3-10 p. 24).

Task 4: Insert videodisc player controller card into Slot #4 of the Apple II. Insert the controller card into Slot #4 which is the fifth slot from your left as you are facing the keyboard.

3.7.2 MCA videodisc player with a VMI controller card. The following equipment is required:

1. Apple II computer,
2. VMI videodisc player controller kit (Allen Communications, Inc.),
 - a. videodisc controller card,
 - b. video junction box, and
 - c. ribbon cable to connect the Apple II and videodisc player.

Three coaxial cables are provided with the controller kit but these cables will not be connected until Section 3.12.

Task 1: Setting switches on the videodisc player controller card. Hold the controller card with the chips facing you and the fingers facing down. Locate the set of four small switches in a red encasing.

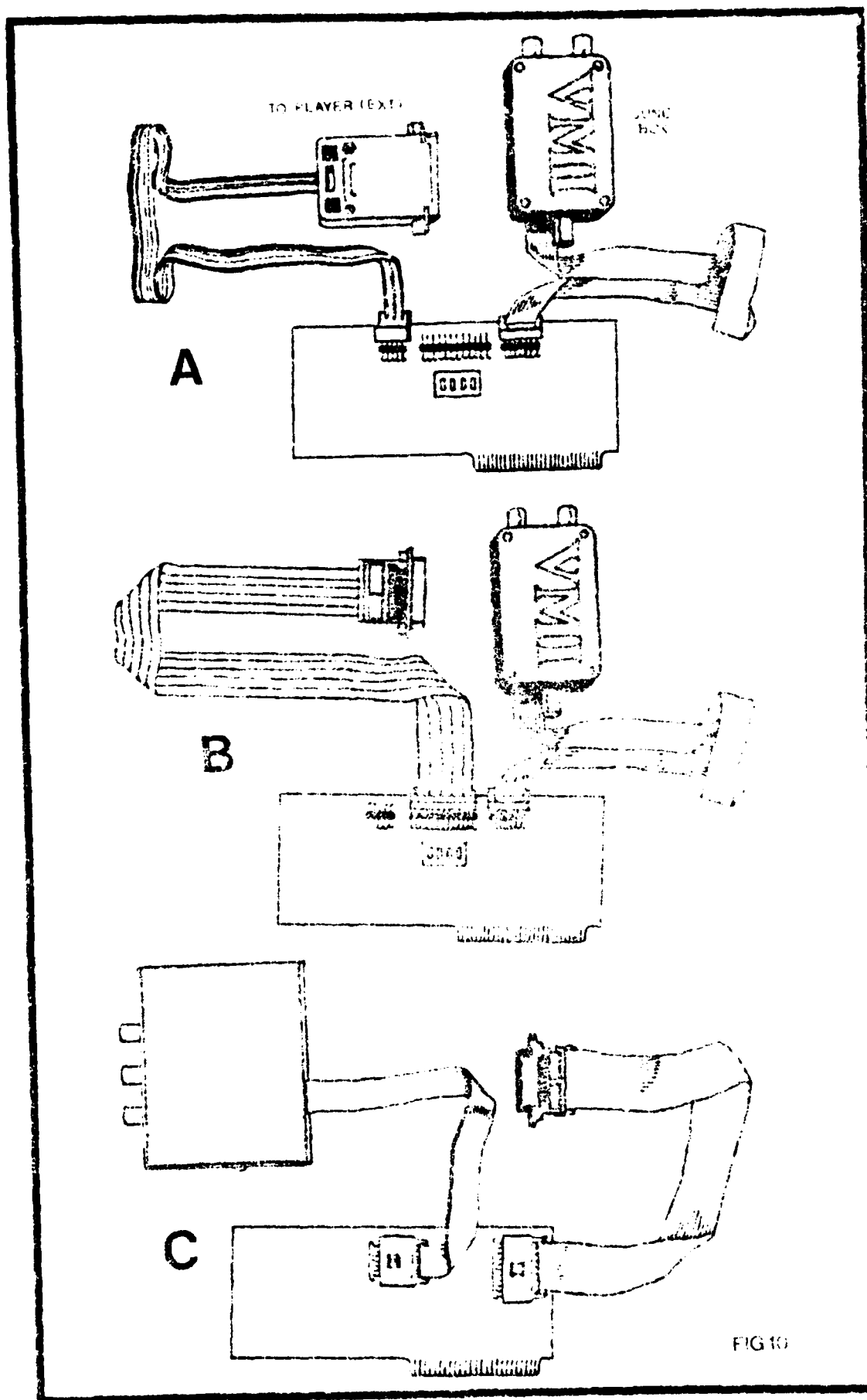


Figure 3-10. Connections of the videodisc controller card with the video junction box. Connections for the following equipment is illustrated: (A) Sony videodisc player with a VMI controller card; (B) MCA player with a VMI controller card; and (C) MCA player with a VAI-1 controller card.

Switch settings differ for the MCA players Model 1 (PR-7820-1) and Model 3 (PR 7820-3). For the Model 3 gently press the bottom of the two switches on the left until the bottom of the switches are flush with the case. For the third switch from the left, press down the top of the switch, and for the rightmost switch, press the bottom of the switch until it is flush with the case (see Figure 3-9 p. 22). For the Model 1 player, all four switches should be pressed down on the bottom.

Task 2: Connecting the Allen controller card to the MCA player. Pick up the end of the ribbon cable that has the smaller plug. While holding the controller card (fingers of card facing downward on the right), place the plug of the ribbon cable on the leftmost connector; the connector is labeled TO VIDEODISC. Take the other end of the ribbon cable and attach it to the socket labeled EXT on the videodisc player. (See Figure 3-10, p. 24)

Task 3: Plug video junction box cable into videodisc player controller card. The video junction box is a black box that comes with the controller card. A ribbon cable is attached to that black box. Hold the card with fingers of the card facing down and to your right. Gently place the plug on the end of the ribbon cable on the connector pins on the controller card labeled TO VIDEO JUNC BOX; this connector is located in the upper right-hand portion of the card. (See Figure 3-10, p. 24)

Task 4: Insert videodisc player controller card into Slot #4 of the Apple II. Insert the controller card into Slot #4 which is the fifth slot from your left as you are facing the keyboard.

3.7.3 MCA videodisc player with a VAI-1 controller card. The following equipment is required:

1. Apple II computer,
2. Videodisc player controller kit (Colony Productions),

- a. Videodisc controller card (VAI-1),
- b. Video junction box, and
- c. Ribbon cable to connect the Apple II and videodisc player.

Three coaxial cables are provided with the controller kit but these cables will not be connected until Section 3.12.

Task 1: Insert video junction box plug into videodisc controller card.

There is a ribbon cable attached to the black video junction control box. While holding the controller card, take the plug and wiggle it into the socket labeled TO VIDEO JUNCTION BOX. The colored edge of the cable should be facing the bottom side of the card, but more importantly, the cable and socket allow insertion in only the correct manner. (See Figure 3-10, p. 24)

Task 2: Insert the videodisc player plug into the videodisc player controller card. The end of the cable with the smallest plug must be inserted into the plug on the card labeled TO VIDEODISC PLAYER. This socket is located in the upper right-hand portion of the controller card. Take the other end of the ribbon cable and attach it to the socket labeled EXT on the videodisc player. (See Figure 3-10, p. 24)

Task 3: Insert videodisc player controller card into Slot #3 of the Apple II. Insert the controller card into the fourth slot from the left.

3.8 Connecting the Printer to the Printer Controller Card and Inserting the Card into the Apple II (Optional)

The primary function of the printer is to print records on student performance. If student records are not kept, then a printer is not required and Sections 3.8.1 and 3.8.2 may be ignored. VISTA is designed to operate with the Apple Silentye printer. While other printers have not been tested with VISTA, certain others can be used with only minor modifications. However, due to the large number of commercially available printers, it is beyond the scope of this manual to discuss required modifications.

3.8.1 Insert the controller card into Slot #1. The Silentype printer controller card must be installed into Slot #1 of the Apple II. This is the second slot from the left as the slots are numbered from zero. Insert the card as with the other cards by grasping the edges of the card, and with a rocking motion, gently but firmly push the card into the slot.

3.8.2 Plug the printer into the controller card. After the card has been inserted into the Apple II, the printer itself must be connected to the card. There is a socket on the front of the card that connects with the plug attached to the Silentype printer card. Simply plug the printer cable into the socket, then run the cable through the second long notch from the left (keyboard facing you) on the back of the Apple II case, and push the cable all the way to the bottom of the notch. It is important that the cable be seated firmly in the notch so that it will minimize possible strain on the cable and the interface.

CAUTION: Do not connect or disconnect the printer cable when your Apple is on.

3.9 Summary of Card Positions in Apple II Slots

Table 3-1 p. 28 summarizes: (1) cards which are required and optional with VISTA and (2) slot location of these cards in the Apple II. Card positions for computers having an Allen Communications, Inc. videodisc controller card (VMI) and a Colony Productions, Inc. card (VAI-1) are summarized separately.

Table 3-1

SUMMARY OF CARD POSITIONS FOR VAI-1 SYSTEM

<u>Card Type</u>	<u>Apple II Slot No.</u>	<u>Required/Optional</u>
Language (16K RAM)	0	Required
Printer Controller	1	Optional
Empty	2	
Videodisc Player Controller VAI-1	3	Required
Empty	4	
Light Pen Controller	5	Optional
Diskette Drive Controller	6	Required
Clock	7	Required

SUMMARY OF CARD POSITIONS FOR VMI SYSTEM

<u>Card Type</u>	<u>Apple II Slot No.</u>	<u>Required/Optional</u>
Language (16K RAM)	0	Required
Printer Controller	1	Optional
Empty	2	
Empty	3	
Videodisc Player Controller VMI	4	Required
Light Pen Controller	5	Optional
Diskette Drive Controller	6	Required
Clock	7	Required

Only one videodisc player controller card is used in this system; if the VAI-1 card is used it must be in Slot 3 and if the VMI card is used it must be in Slot 4.

Two cards are optional with either system: the Silenotype printer card and the Symtec light pen controller card. However, if a hand controller is not installed, then the light pen card must be in place.

3.10 Switch Settings on the Monitor

There is no specific manufacturer or model of monitor required for operation of VISTA; any monitor should work. However, for operation of VISTA, the monitor needs to have three switches set in a particular configuration.

3.10.1 Set the video input switch. The first setting of importance is the "LINE" switch. This may be either a push button or a twist type. The switch may have two settings (VTR and LINE) or three settings (VTR, LINE and TV). Regardless of the number of options, the switch must be set to LINE. This allows the picture to come from both the computer and the videodisc player. The switch is usually on the front of the monitor but is located on the back or side of certain models.

3.10.2 Set the input resistance switch. The input resistance switch must also be properly set. This switch is located on the back of the monitor and it has two settings. One setting will read either 75 ohms or LOW (LOW = 75 ohms) while the other setting will read either 300 ohms or HIGH (HIGH = 300 ohms). Depending on the model and manufacturer of the monitor, the switch settings can be labeled in four possible combinations:

1. 75 ohms/300 ohms
2. 75 ohms/HIGH ohms
3. LOW/300 ohms
4. LOW/HIGH

Always have the switch set to the 75 ohms or LOW position. If the monitor is in the HIGH or 300 ohms position, then colors will bleed into each other on the screen.

3.10.3 Set the channel if TV is used. A third switch which may need setting is the channel. However, if you have a pure monitor (that is, it cannot serve as both a TV and monitor), it will not have a channel selector. If you have a TV/monitor, the channel selector should be set on 4.

NOTE: If you are using a TV, you must take the video signal from the video switching box and run it through an RF modulator. In this case, the channel selector should be set to the channel (frequency) of the modulator.

Improvement of the quality of the picture may require adjustment of color, intensity, and sharpness. These adjustments will be discussed in the Section Fine Tuning the System.

3.11 Switch Settings on the Videodisc Player

In order for the VISTA system to function properly, three switches on the videodisc player must be set properly.

3.11.1 Switch settings on the MCA player. On the MCA player, the first switch to be set is the speed control. This switch is located on the front panel, on the right-hand side and should be set to NORMAL. The second switch is labeled TV/VDP selector. This switch is also located on the front but in the lower left-hand corner. This switch should be set to VDP. The last and most important switch is labeled SYNC. This switch is located on the rear panel at lower center and should be set to INT switch. Settings are summarized in the following Table 3-2.

3.11.2 Switch settings on the Sony player. The first switch on the Sony videodisc player to be set is labeled ANT/VDP. This switch is located on the front panel, on the lower right and should be set to the VDP position. The second switch is labeled EXT CPU and is located on the rear panel on the right-hand side. This switch should be set to the ON position. The last Sony switch is labeled SC/SYNC and is located to the immediate right of the EXT CPU switch. This switch should be set to the INT position. Switch settings are summarized in the following table.

Table 3-2
Switch Settings On Videodisc Players

Player	Switch Label	Setting	Location
MCA	Speed Control	Normal	Front Panel, Right-Hand Side
	TV/VDP	VDP	Front Panel, Lower Left-Hand Side
	SYNC	INT	Rear Panel, Lower Center
Sony	ANT/VDP	VDP	Front Panel, Lower Right-Hand Side
	EXT CPV	ON	Rear Panel, Right-Hand Side
	SC/SYNC	INT	Rear Panel, Right-Hand Side

3.12 Cable Connections for Video and Audio Output

The final set of tasks will allow video and audio display by the monitor or TV set. The first three tasks will allow video to come from either the videodisc player or the computer; three coaxial cables are required and they are provided with the videodisc player controller card. Each of the three cables connect to the video junction box. The connections are the same for junction boxes provided with the two types of videodisc controller cards (VMI by Allen Communications, Inc. and VAI-1 by Colony Productions) except for minor differences in connection labels. Task 4 allows audio to be heard on the monitor or TV set when a motion sequence is played on the videodisc player.

A listing of the connections described in Tasks 1 through 4 is given in the following table. Refer to this table as you read the next four tasks.

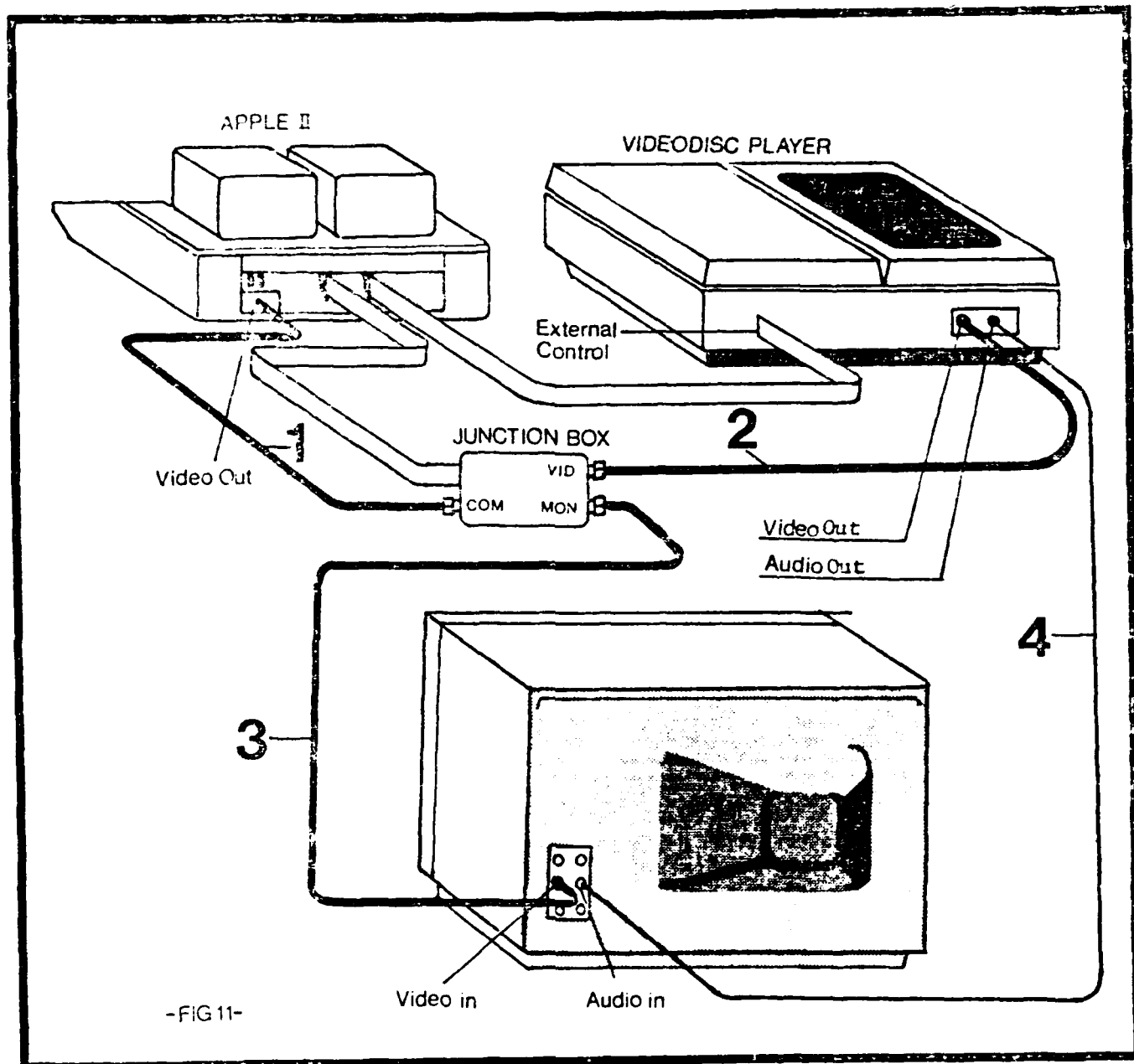


Figure 3-11. A schematic diagram of video and audio connections.

Table 3-3
Cable Connections For Video and Audio Output

Task No.	From		To	
	Equipment/ Connection Label	Type of Connector	Equipment/ Connection Label	Type of Connector
1	Computer/VIDEO OUT	RCA	Junction Box/COM	BNC
2	Junction Box/VID	BNC	Videodisc Player/ VIDEO OUT	BNC
3	Junction Box/MON	BNC	Monitor/VIDEO IN	BNC
4	Videodisc Player/ AUDIO OUT	RCA	Monitor/AUDIO IN	RCA

3.12.1 Task 1: Connecting the Apple II and the video junction box.

Completion of this task will allow the video output of the Apple II to feed into the video junction box. The appropriate cable for this connection is provided with the videodisc player controller card (see Section 3.7.1, p. 21). Each end of this cable has a particular type of connector. Locate the cable which has a different type of connector at each end. One end has a plug-in or phono jack connector (called an RCA connector). Plug this male-type connector into the connection on the Apple II labeled VIDEO OUT, which you will find located on the back of the computer in the lower left-hand corner. The other end of the proper cable has a female-type, twist-on connector (called a BNC connector). This connector matches the proper connector on the junction box (labeled COM on the VMI box, and COMP on the Colony box). Press the BNC connector onto the junction box connector and gently twist to the right to seat the connection.

3.12.2 Task 2: Connecting the videodisc player to the video junction box.

This connection requires a coaxial cable with BNC connectors on both ends. Connect one end of the cable to the connection labeled VIDEO OUT on the videodisc player. The other end of the cable is attached to the VID (VMI box) or V.DIS (Colony box) connection of the junction box.

3.12.3 Task 3: Connecting the monitor or TV set and video junction box.

This task differs depending on whether a monitor or TV set is used.

A monitor requires one coaxial cable with BNC connectors on both ends. One connector is attached to the connection labeled VIDEO IN; this is located in the rear of the monitor. If there are a number of video input connections, select the one that is for LINE or LINE IN. LINE connections are found only on monitors. The other end of the cable is attached to the MON connector of the video junction box.

A TV set requires (1) an RF modulator, (2) a coaxial cable to connect the video junction box and the modulator, and (3) another coaxial cable connecting the modulator to the TV set. The cable connecting the junction box and modulator will probably require BNC connectors at both ends; one will attach to the MON (abbreviation for monitor) connection of the junction box and the other to the input of the RF modulator. The cable connecting the modulator and TV set will require a BNC connection at the modulator and either a BNC or VHF connection at the TV set depending on the connector type of the TV. The channel selector on the TV set should be set to the same frequency (channel) as the modulator. Most modulators operate on only one channel.

3.12.4 Task 4: Connecting the audio cable between the videodisc player and the monitor or TV set. Audio during VISTA (except for beeps occurring as the student operates the lesson) comes from the videodisc system; audio is produced only when motion sequences are being played. The audio cable is supplied with the videodisc player. The cable is a standard phone cable with RCA type connectors at both ends. There are two audio output channels on the videodisc player; they are labeled CH1-L and CH2-R. Only one channel needs connecting for VISTA operation. Attach one end of the audio cable to either the CH1-L or CH2-R connector and attach the other end of the cable to the AUDIO IN connection of the monitor or TV set. If a monitor is used, use the LINE or LINE IN audio connection.

3.12.5 Summary of audio and video cable connections. Since there are 2 types of junction boxes (VMI and Colony), 2 manufacturers of players (Sony and MCA), and an unknown number of monitors and TV sets, it is impossible to show a diagram for all possible combinations of equipment configurations. The previous figure (3-11) is a schematic diagram of the connection described in this section with major connections labeled irrespective of where they may actually be on particular models.

3.13 Arrangement of the Equipment

When completely assembled, the visible components of VISTA are the monitor/TV set, videodisc player, Apple II, two diskette drives, and student responder (light pen or hand controller). VISTA was designed for use by individuals or small groups and the following arrangement is well-suited for this use. All equipment is on a metal, 3-layered rack with wheels. With the monitor elevated above eye level, individuals or an entire group can have an unobscured view of the screen. A hand controller is used in this setup because it would be difficult to use a light pen with the elevated screen. The hand controller also has an added advantage with small groups; the person using the controller can do so without moving in front of the screen as often occurs during use of a light pen. For effective use of either the hand controller or light pen, it is desirable to keep the attachment cord as long as possible; the student responder is attached to the Apple II and maximum length of the cord can be achieved with the Apple II situated on the middle rack. Disk drives can be either placed on top of the computer as shown or stacked on top of each other off to the side of the computer.

Use of VISTA by an instructor with a large group or class requires a slight modification of the arrangement shown above. In large groups, the

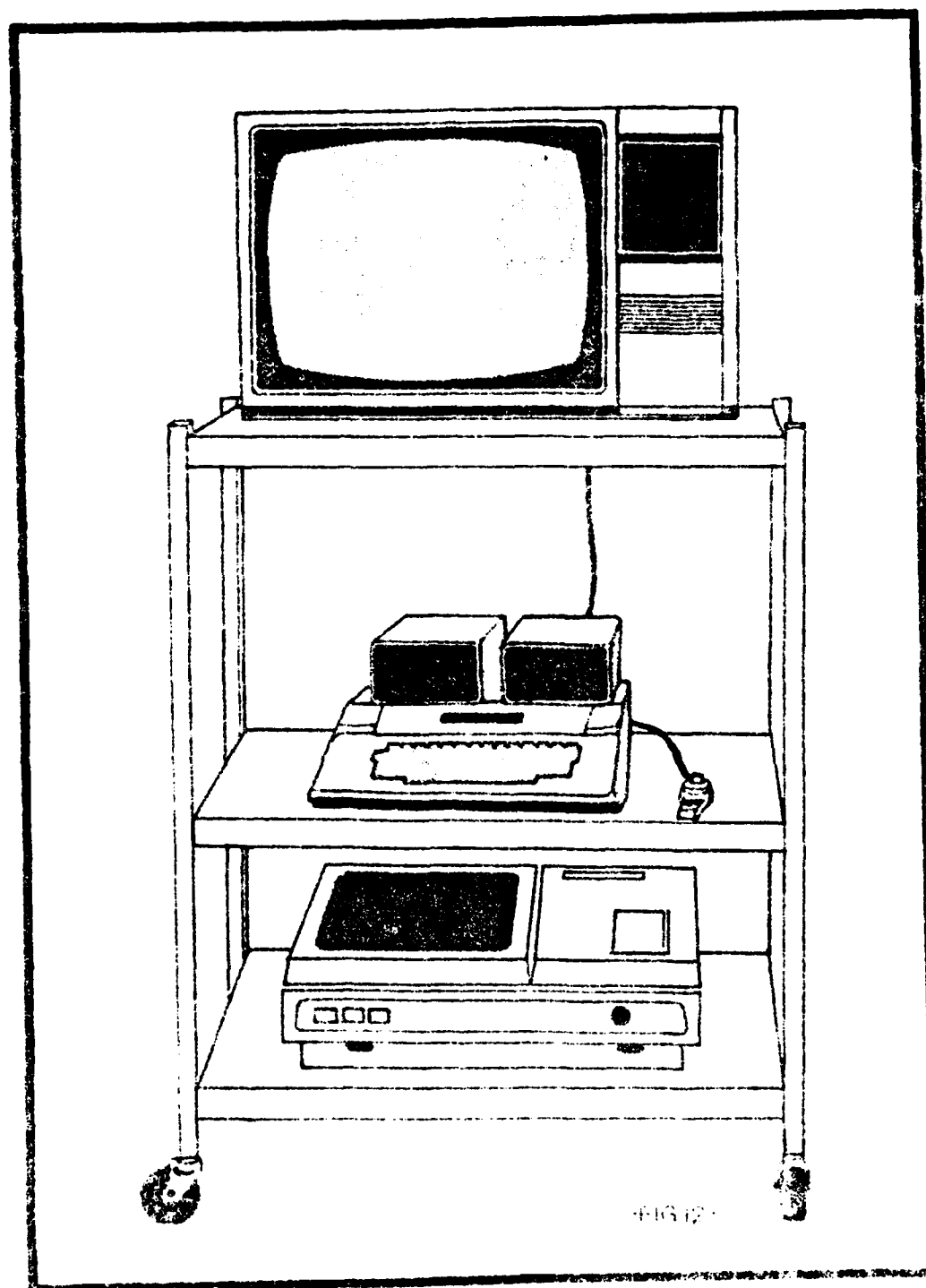


Figure 3-12: Recommended equipment arrangement.

instructor operates a system placed on a rack. However, most students in a large class will probably be too far from the screen. To solve this problem, the video output from the monitor/TV set on the rack can be used as input to monitors or TV sets situated along the side of the classroom. Many classrooms at military installations have monitors/TV sets mounted on the side walls; these sets are usually driven by a single input source, and in this case, it would be the output from the monitor connected with the Apple II.

Note: If the classroom contains TV sets, and not monitors, then the input they receive from VISTA must first go through an RF modulator. All channel selectors on the TV sets must then be set to the frequency/channel of the RF modulator.

The equipment arrangement shown above is only one of many possible configurations. Evaluation of training effectiveness of VISTA with individuals and small groups has been conducted with equipment placed on tables. A few small tables or a single large one can be used. However, tables rarely have wheels. If the equipment cannot be permanently located in the room used for training, then the equipment must be partially disassembled for transport. When all equipment is contained on one rack with wheels, then transportation between different locations does not require any disassembly of the equipment.

SECTION 4

FINE TUNING AND TESTING THE SYSTEM

4.1 Introduction

After the equipment is setup as described in Section 3, several final tasks are required to insure proper operation of the system. The tasks described in this section should be performed before the system is used in the training environment. While some of the tasks described in this section (e.g., initial video adjustment) may not be necessary for system operation, they do fine tune the system for operation at optimal quality.

In the process of fine tuning the system, it is also being tested for operation. If the system has been incorrectly set up then it may be impossible to perform some or all of the tasks described in this section. If operational problems develop, then refer to Section 5, Troubleshooting. Section 5 summarizes the types of operational problems that may occur and list courses of action to solve the problem.

4.2 Activating the System

In order to fine tune the system, it must first be turned on. The following will summarize tasks required to do so. A section number is listed in parenthesis at the end of each task. This number refers to the section in the VISTA: INSTRUCTOR'S GUIDE which gives a detailed explanation of how to perform that task.

1. Loosen videodisc player drive spindle (Appendix B).
2. Insert SYSTEM Diskette into Disk Drive # 1 and a LESSON Diskette into Disk Drive #2 (5.1.1).
3. Turn on monitor (5.1.2).

4. Turn on computer (5.1.3).
5. Turn on videodisc player (5.1.4).
6. Place videodisc which matches the LESSON Diskette into the videodisc player (5.1.4).

4.3 Initial Video Adjustment

With a new computer, it may be necessary to adjust the video output intensity. The video output intensity affects the quality of the computer generated text and the operation of the light pen if one is being used.

Adjustment will be needed if (1) text on the screen appears too faint or (2) text is too bright and fuzzy. If neither of these conditions occur, then video adjustment can be ignored.

Behind the game I/O plug (see Figure 3-6) you will find an adjustment knob. This adjustment can be turned using a slender, long shanked screw driver. While watching the screen of the monitor, adjust the knob clockwise until the text appears to be clear and bright. If either the text appears too bright and fuzzy or a color ghost appears next to each letter, then turn the adjustment back slightly in a counter clockwise direction.

After VISTA has been activated as described in Section 4.2, text will appear on the screen. It will be necessary to view this text to guide the user in making the video adjustment. The text which appears will depend on the type of interactive device attached to the system: (1) a hand controller, (2) a light pen, or (3) both a light pen and a hand controller. The text that will appear on the screen under these three conditions is:

- (1) hand controller attached,

THE SYSTEM STATUS IS SET TO:

1. THE <PEDAGOGICAL/EXPERIENTIAL>
INSTRUCTIONAL MODE
2. <KEEP/NOT KEEP> STUDENT RECORDS

IS THIS WHAT YOU WANT?

***YES**

***NO**

- (2) light pen attached,

PRESS LIGHT PEN TO ASTERISK AND
TOUCH RING
*

- (3) both light pen and hand controller attached

THIS EQUIPMENT HAS BOTH A LIGHT PEN AND
HAND CONTROLLER CONNECTED.

WHICH DO YOU WANT TO USE:

TO CHOOSE THE HAND CONTROLLER PUSH THE
BUTTON BY THE KNOB.

TO CHOOSE THE LIGHT PEN TOUCH THE RING
ON THE PEN.

When the appropriate message appears on the screen, then you are ready to begin adjustments. Do not respond to the message until after video adjustments are made.

4.4 Interactive Device Related Tasks

4.4.1. Introduction. The task differs depending on whether a light pen or a hand controller is attached to the system. The hand controller task of choosing the correct hand controller is described in Section 4.4.2, while light pen adjustment is described in 4.4.3.

If both the hand controller and the light pen are attached to the system, you must respond to the following message:

THIS EQUIPMENT HAS BOTH A LIGHT PEN AND
HAND CONTROLLER CONNECTED.

WHICH DO YOU WANT TO USE:

TO CHOOSE THE HAND CONTROLLER PUSH THE
BUTTON BY THE KNOB.

TO CHOOSE THE LIGHT PEN TOUCH THE RING
ON THE PEN.

If you choose the hand controller, then perform the task described in Section 4.4.2 and if you choose the light pen, then perform the task described in Section 4.4.3. After the task is completed, turn off the computer, turn it back on, choose the interactive device that was not chosen last time and then perform the task in Section 4.4.2 or 4.4.3, whichever hasn't been performed.

4.4.2 Choosing the correct hand controller. The hand controllers recommended for use in the VISTA system are Apple hand controllers manufactured by the Keyboard Company. These controllers have the numbers 0 and 1 marked clearly on them. In this case, use the controller marked 0. Hand controllers manufactured by other companies will work in the VISTA system. Some of these companies do not mark their hand controllers. If this is the case, you must determine which is the correct controller to use.

With the following message on the screen,

THE SYSTEM STATUS IS SET TO:

1. THE <PEDAGOGICAL/EXPERIENTIAL>
INSTRUCTIONAL MODE
2. <KEEP/NOT KEEP> STUDENT RECORDS

IS THIS WHAT YOU WANT?

****YES****

****NO****

4.4.3 Light pen adjustment. If you have only a light pen attached or if you have chosen to use the light pen with a hand controller also attached, you may need to adjust light pen alignment. When the tip of the pen is positioned on a character or symbol on the screen, the light pen sends a signal to the computer as soon as the ring on the pen is touched. However, if the light pen gets out of alignment, then the computer reads an incorrect location of the pen tip.

PRESS LIGHT PEN TO ASTERISK AND
TOUCH RING

LIGHT PEN IS IN ALIGNMENT

If the light pen is out of alignment, then you will see the following:

THE LIGHT PEN NEEDS ADJUSTMENT
PRESS RETURN ON KEYBOARD TO CONTINUE

When the <RETURN> key is pressed, the following message will appear:

HOLD LIGHT PEN TO ASTERISK AND
TOUCH RING
*

When holding the pen on the asterisk, it is better to use your left hand because you will need your right hand to make adjustments inside the computer. As soon as the pen is pressed to the screen and you have touched the ring, the screen will show:

X = [1-40] Y = [1-24]
HOLD LIGHT PEN TO ASTERISK AND TOUCH RING
TURN X ADJUSTMENT
[NONE, CLOCKWISE, OR COUNTER CLOCKWISE]
TURN Y ADJUSTMENT
[NONE, CLOCKWISE, OR COUNTER CLOCKWISE]
*
PRESS PEN TO THIS LINE TO CONTINUE

This message on the screen gives information needed to make light pen adjustments. The TURN X and TURN Y refer to adjustments on the light pen card (slots, the sixth slot from the left) located inside the computer. There are three screws located on the top and toward the back of the card. The screw labeled SYNC should absolutely not be adjusted. The middle screw is the

X-adjustment and is clearly labeled X, and the screw closest to the keyboard is the Y-adjustment and is labeled Y. There are three words which can appear on the screen after the TURN X ADJUSTMENT and TURN Y ADJUSTMENT messages. They are: NONE, CLOCKWISE, and COUNTER CLOCKWISE. NONE means that no adjustment is necessary. If adjustment is needed, it is either a CLOCKWISE or COUNTER CLOCKWISE turn on the adjusting screws. When adjustment is complete, press the pen to the bottom line and touch the ring.

NOTE: The "X=" and "Y=" message at the top of the screen give helpful information. For a correct adjustment, the message should read: X = 20 Y = 12.

After adjustment is complete, the computer rechecks the accuracy of light pen alignment by requiring the following response:

PRESS LIGHT PEN TO ASTERISK AND TOUCH RING

*

If the pen is still out of alignment, you are automatically required to re-do the adjustments outlined in this section.

4.5 Balancing Video Output for Computer and Videodisc

There are two sources of video for VISTA: text generated by the computer and motion sequences from the videodisc system. Having two sources of video output can create a problem.

A particular brightness and sharpness adjustment on the monitor may produce ideal video output from one source (i.e., the computer or videodisc system) but not the other. Consequently, brightness and contrast must be adjusted to strike a balance in quality for the two sources of video output.

To achieve this balance, it is necessary to make adjustments while video alternates between the two sources of output. The only way to alternate between computer and videodisc generated output is to run a VISTA lesson.

The following message should already be showing if: (1) only the hand controller is attached, (2) the hand controller has been chosen as the interactive device if the light pen is also attached, and (3) the light pen has just been adjusted.

THE SYSTEM STATUS IS SET TO:

1. THE <PEDAGOGICAL/EXPERIENTIAL>
INSTRUCTIONAL MODE
2. <KEEP/NOT KEEP> STUDENT RECORDS

IS THIS WHAT YOU WANT?

***YES**

***NO**

System status refers to the current setting for (1) instructional mode (Pedagogical/Experiential) and (2) whether student records are or are not being kept. To balance video output, you can use either Pedagogical or Experiential Modes of instruction. However, it is easier to get to the actual lesson if student records are not being kept. If the message states that records won't be kept, then use the interactive device to answer ***YES**.

If the system status is set to keep student records, then answer ***NO** to the above message. You will be taken through steps to select (1) instructional mode and (2) record keeping status. Use the interactive device to select instructional mode.

CHOOSE INSTRUCTIONAL MODE

I WISH TO USE THE:

PEDAGOGICAL INSTRUCTIONAL MODE

EXPERIENTIAL INSTRUCTIONAL MODE

Then select to keep student records when the following appears.

CHOOSE TO KEEP OR NOT KEEP RECORDS

I WISH TO:

COLLECT DATA ON STUDENTS

NOT COLLECT DATA ON STUDENTS

Then you will be allowed to confirm that the correct changes in status were made. The message tells you the status of the system and if you have set it correctly, then answer **YES**. The message reads:

YOU HAVE SELECTED:

1. THE <PEDAGOGICAL/EXPERIENTIAL>
INSTRUCTIONAL MODE
2. <KEEP/NOT KEEP> STUDENT RECORDS

IS THIS WHAT YOU WANT:

YES

NO

If the system status is set the way you want it, you can answer **YES** and the status will remain unchanged. The lesson should now begin. Proceed through the lesson as directed by messages on the screen. You will eventually alternate between video which originates from the two output sources. Make brightness and sharpness adjustments as you proceed through the lesson.

4.6 Charging the Clock Battery

If the Apple II and the clock card are to be used for any purpose other than VISTA, then the clock battery should be properly charged. The clock battery is charged from the power supply of the Apple II computer. After the clock card is installed properly and its battery connected, turn the Apple II computer on and leave it on for four days. This procedure properly charges the battery and extends its life.

SECTION 5

TROUBLESHOOTING

Problem	Possible Solution
Monitor fails to come on.	<ol style="list-style-type: none"> 1. Check monitor power cord. 2. Check fuses. 3. Monitor inoperative. Check monitor manual.
Monitor is on but no picture.	<ol style="list-style-type: none"> 1. Check input setting. Should be set to LINE. 2. Check cable connections in back of monitor. They should be secure. 3. Check all cable connections to junction box. 4. Check cable connected to computer. from junction box. 5. Check cable connections to videodisc player. 6. Check to see that computer is on. 7. Press reset button on computer. 8. Monitor inoperable.
Monitor does not display video from videodisc player, but text from computer is displayed.	<ol style="list-style-type: none"> 1. Check videodisc cable connections. 2. Check system diskette. If the diskette is for a different videodisc player, the program will operate, but no video will play from the videodisc player.
System functions properly but video is fuzzy or colors bleed.	<ol style="list-style-type: none"> 1. Check color adjustments. 2. Check adjustments for sharpness and brightness. 3. Check video input ohm setting. This setting should be 75 ohms or LOW.
Computer power light comes on but VISTA does not begin.	<p>Turn computer off. Check computer diskettes for proper placement. Turn computer back on.</p>
When computer is turned on, the monitor shows the message: NO SYSTEM.APPLE.	<p>SYSTEM Diskette not in Drive #1. Turn computer off and check diskettes.</p>

Problem	Possible Solution
Computer comes on but disk drives do not come on or continue to spin.	<ol style="list-style-type: none"> 1. Turn computer off. Check for proper installation of disk drives into controller card. 2. Check to see if disk controller is in slot 6. 3. Check cable connections - no pins sticking out, connector pushed all the way down on the pins.
Program runs until message: PLEASE WAIT, VIDEODISC IS BEING POSITIONED comes on, then stops with no apparent action from videodisc player.	<ol style="list-style-type: none"> 1. Check slot position of videodisc controller card. 2. Check all cable connections for videodisc player to videodisc player controller card and junction box. 3. Check to see if you have the correct system software. 4. Check CPU switch on Sony. Must be set to EXT. 5. Check videodisc - must be in player with correct side up. 6. Is videodisc player powered?
Light pen will not work.	<ol style="list-style-type: none"> 1. Check slot position - must be slot 5. 2. Check alligator clip from light pen. Must be clipped to center post of video out post and must not be touching the sides. 3. Check video output intensity. May be too low.
Plays until first video sequence, then will not return to text.	<ol style="list-style-type: none"> 1. Check connections to junction box. 2. Check clock card. Should be in slot 7.
Lights flash on the front panel of videodisc player and player does not run properly.	Check SYNC switch on back of videodisc player - should be internal. ("Int.")
No audio.	<ol style="list-style-type: none"> 1. Check audio cables. 2. Check volume on monitor.
Videodisc player clicks and whirs loudly when turned on.	Turn videodisc player off immediately. Videodisc player lockdown screw is in. Unlock this screw.